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TSMC-99-149B

March 30, 2001

H. Coe 7-20-01 #3 IDS

To: Commissioner of Patents and Trademarks
Washington, D.C. 20231

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Subject: Serial No. 09/755,282 ✓ 01/08/01 ✓

Jay Chen

METHOD OF IMPROVING COPPER PAD ADHESION ✓

Grp. Art Unit:

INFORMATION DISCLOSURE STATEMENT

Enclosed is Form PTO-1449, Information Disclosure Citation In An Application.

The following Patents and/or Publications are submitted to comply with the duty of disclosure under CFR 1.97-1.99 and 37 CFR 1.56. Copies of each document is included herewith.

U.S. Patent 5,700,735 to Shiue et al., "Method of Forming Bond Pad Structure for the Via Plug Process", teaches the formation of via plugs between the top metal layer and the pad.

U.S. Patent 5,707,894 to Hsiao, "Bonding Pad Structure and Method Thereof", teaches the formation anchor pads under the pad for better adhesion properties.

U.S. Patent 5,807,787 to Fu et al., "Method for Reducing Surface Leakage Current on Semiconductor Integrated Circuits During Polyimide Passivation", teaches a method of forming a pad with reduced electrical leakage.

U.S. Patent 5,834,365 to Ming-Tsung et al., "Method of Forming a Bonding Pad", describes a method to form contour stripes under the Al pad layer to create an irregular surface.

U.S. Patent 5,309,025 to Bryant et al., "Semiconductor Bond Pad Structure and Method", describes conductive lines under the pad which form an irregular pad surface to improve bond pad adhesion.

U.S. Patent 5,904,565 to Nguyen et al., "Low Resistance Contact between Integrated Circuit Metal Levels and Method for Same", describes an interconnect process with multiple conductive and non-conductive barrier layers.

U.S. Patent 5,795,796 to Kim, "Method of Fabricating Metal Line Structure", describes an Al interconnect with a TaN barrier layer.

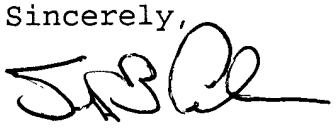
U.S. Patent 5,668,411 to Hong et al., "Diffusion Barrier Trilayer for Minimizing Reaction between Metallization Layers of Integrated Circuits", discloses a Al/TaN/Al structure with an anneal step.

U.S. Patent 5,785,236 to Cheung et al., "Advanced Copper Interconnect System that is Compatible with Existing IC Wire Bonding Technology", discloses an Al pad over a Cu interconnect.

U.S. Patent 5,547,901 to Kim et al., "Method for Forming a Copper Metal Wiring with Aluminum Containing Oxidation Barrier"', discloses a Cu wire with an Al oxide containing barrier layer.

U.S. Patent 5,631,498 to Anschel et al., "Thin Film Metallization Process for Improved Metal to Substrate Adhesion", describes a metallization layer formed on a substrate with improved adhesion thereto, by performing the deposition at an elevated temperature which favors the formation of chemical bonds of the metal to the substrate as well as clusters of metal embedded within the substrate and contiguous with the metallization layer.

Sincerely,



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